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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,626	11/28/2001	Daniel L. Gysling	753-001.002	5322

7590 09/10/2004  
Moser Patterson & Sheridan  
3040 Post Oak Blvd Suite 1500  
Houston, TX 77056-6582

EXAMINER	
LAU, TUNG S	
ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/996,626	<b>Applicant(s)</b> GYSLING ET AL.	
	<b>Examiner</b> Tung S Lau	<b>Art Unit</b> 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8-16-2004 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 2, 5, 3, 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Gysling et al. (U.S. Patent Application Publication 2002/0152802).

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Regarding claim 1:

Gysling discloses a method for determining component flow rates of a

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multiphase fluid in a conduit, the fluid consisting of at least three known components, the fluid having a pressure and temperature at each location of the fluid (page 2, section 0014-0015), the method comprising the steps of: a) measuring at each of two different positions along the conduit at least four mixture quantities (page 1, section 0003-0005), b) providing a speed of sound value for each of the components at the pressures and temperatures at which the four different mixture quantities are measured (page 2, section 0012-0016), c) providing a trial value for each of either the component flow rates or phase fractions of the fluid (page 2, section 0012-0016); d) using a predetermined model to calculate values for the measured mixture quantities based on the speed of sound values and the trial values for each of either the component flow rates or the phase fractions (page 2, section 0012-0016), e) using a predetermined error function to determine an error value (page 8, section 00105-0109); f) determining whether the calculated values are acceptable based on the error value (page 8, section 0111-0113, fig. 7), and , g) if they are not, using a predetermined optimizing to provide a new trial value for each of either the component flow rates or the phase fractions and repeating step d through f (page 8, section 0105-0113, fig. 7).

Regarding claim 4:

Gysling discloses an apparatus for determining component flow rates of a multiphase fluid in a conduit, the fluid consisting of at least three known components (page 2, section 0014-0015), the fluid having a pressure and temperature at each location of the fluid, the apparatus comprising: sensors for measuring at each of two different positions along the conduit at least four mixture quantities (page 2, section 0014-0015, fig. 1, unit 14, 16, 18, 40); a modeler for using a predetermined model to calculate values for the measured mixture quantities based on speed of sound values for each of the components at the pressures and temperatures at which the four different mixture quantities are measured and trial values for each of either the component flow rates or the phase fractions (page 8, section 0105-0111); the trial values and speed of sound values provided to the modeler (page 1, section 0014-0017); an error function evaluator for using a predetermined error function to determine an error value (page 8, section 0105-0111, fig. 7); and an optimizer for using a predetermined optimizing algorithm to determine whether the calculated values are acceptable based on the error value and, if they are not, provide a new trial value to the modeler for each of either the component flow rates or the phase fractions (page 8, section 0105-0111, fig. 7).

Regarding claims 2, 5, Gysling discloses sum of square the calculate value at each point (page 5, section 0076-0078); Regarding claims 3, 6, Gysling discloses sound of speed (page 1, section 0007), flow velocity


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(page 2, section 0014), multiphase fluid (page 2, section 0015) and temperature (page 2, section 0014).

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL

  
John Barlow  
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